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December 8, 1853.

COLONEL EDWARD SABINE, R.A., V.P. & Treas., in the Chair.

The Chairman stated to the Meeting that the President had appointed the following gentlemen Vice-Presidents:—

Colonel Edward Sabine; Thomas Bell, Esq.; Thomas Graham, Esq.; Sir Frederick Pollock, M.A.; the Rev. Baden Powell, M.A.; Charles Wheatstone, Esq.

A paper was read, entitled "On some of the Products of the Decomposition of Nitrotoluylic Acid." By Henry M. Noad, Ph.D., Lecturer on Chemistry at St. George's Hospital. Communicated by A. Hoffmann, Ph.D., F.R.S. Received Nov. 17, 1853.

The author refers to a former memoir in which he described the mode of preparation and properties of two new organic acids, the analogues of benzoic and nitrobenzoic acids in the toluyl or immediately succeeding series, and to which the names of toluylic ($C_{16}H_8O_{44}$) and nitrotoluylic ($C_{16}H_7(NO_4)O_4$) acids were consequently given.

In the present paper he resumes the study of the action of nitric acid on cymol ($C_{20}H_{14}$), and describes first some unsuccessful attempts to procure from that oil the substitution compound $C_{20}\left\{\begin{smallmatrix} H_{13} \\ NO_4 \end{smallmatrix}\right\}$, from which, by the action of reducing agents, he had hoped to procure a new organic base homologous with aniline, toluidine, &c. He then investigates the products of the decomposition of his new nitrogen acid. He describes the preparation and properties of nitrotoluylamide $C_{16}\left\{\begin{smallmatrix} H_6 \\ NO_4 \end{smallmatrix}\right\}O_4, NH_2$, and having succeeded, though by a rather tedious process, in obtaining this substance in some quantity, he studies the action of reducing agents on it. By the action of hydrosulphate of ammonia upon an aqueous solution of the amide, a crystalline substance was procured, which analysis proved to be homologous with the *carbamide*—*carbanilide* of Hofmann, and with the *anilo-urea* of Chancel. The study of its properties showed that it must be considered as the analogue of the latter, that it is the true urea of the toluyl series, being a well-defined organic base, forming a series of crystalline salts, of which the nitrate and oxalate were qualitatively examined. A synoptical view of these ureas is given, showing their relation with the urea type.

By the action of a boiling solution of caustic potash on toluyl urea ($C_2H_3(C_{14}H_7)N_2O_2$), a new acid was procured, the analysis of which showed that it has three homologues in the benzoyl series, viz. *anthranilic acid*, *benzamic acid*, and *carbanilic acid*, all of which are represented by the formula $C_{14}H_7NO_4$, the composition of the new acid being expressed by the formula ($C_{16}H_9NO_4$)

The limited quantity of this acid at the author's disposal, and the great difficulty with which it was procured, did not enable him to decide positively with which of the above acids it corresponds, though its

mode of formation would render it probable that it is the true analogue of *carbanilic acid*. The determination of this question is of some interest, inasmuch as should it prove to correspond to *anthranilic acid*, a road might through it be opened for the introduction of a series of new substances at present entirely wanting, namely, the proper homologues of *salicylic acid* and its derivatives. The author proposes to return to this subject, and he gives, in conclusion, a synoptical view of those corresponding members of the *benzoyl* and *toluyl* groups which in the present and former paper he has established.

December 15, 1853.

THOMAS BELL, Esq., V.P. in the Chair.

The following communications were read :—

1. Extract of a Letter from Dr. Edward Vogel to Colonel Sabine, dated Mourzuk, Oct. 14, 1853.

“ You will receive through the Foreign Office a packet of Astronomical, Meteorological, and Magnetical Observations, made on the way from Tripoli and since my arrival here. My instruments are almost all in good condition, although their cases have split from the effects of heat and dryness, notwithstanding their double, and in some instances triple, leather protection. I saw the great comet for the first time on August 23, but others had seen it three or four days sooner. Its nucleus was very bright, resembling a star of the first magnitude, with a distinctly defined disc of the apparent diameter of Jupiter. The tail made an angle of 86° or 87° with the horizon, inclining to the north. It was a single tail with almost precisely parallel sides. Its length was 10° on the 25th of August, 12° on the 26th, and 15° on the 27th and 29th of August. I have seen here repeatedly the apparent fluctuation in the position of stars which is spoken of in the third volume of *Cosmos*, and have sent the particulars of my observations to Baron von Humboldt. There is no regular rainy season at Mourzuk, but slight showers occur sometimes in the winter and spring, seldom in the autumn. A heavy rain is considered a great calamity, as it destroys all the houses, which are built of mud dried in the sun. It would likewise kill the date trees, by dissolving the salt which is in large quantities in the soil. About twelve years ago there perished above 10,000 date trees in the neighbourhood of Mourzuk, on account of a rain which continued for seven days. The prevailing winds are south and east, the strongest generally west or north-west. Twice or three times I have seen whirlwinds pass through the town, a phenomenon which was common in the deserts between Benioloed and Mourzuk. All the whirlwinds I observed turned in the direction from east by north and west to south. In December and the first half of January the thermometer falls at sunrise (at Moorzuk) as low as 42° , and in places exposed to the wind water freezes during the night. At Sokna I found no one who could remember having seen snow; but at Ghadamis snow was seen by Mr. F. Warrington on the 15th of